# *The Effects of Microgravity and Extreme Temperatures on Mold*

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# *Introduction*

- In March of 1998 Mrs. Wiletha Davis' fifth grade science students planned and executed the experiment which focused on the effects of microgravity and extreme temperatures on mold

# *Method*

- Mold experiment was chosen because class had recently studied different plant forms.
- Adaptability to involve all students was a major factor in selecting the mold experiment.

# *West Richland's Experiment*

- Five slices of bread containing no preservatives were contaminated
- Each slice was rubbed against one of the following items
  - house plants (Peace Lilies)
  - moldy orange
  - grass clippings
  - bathroom floor

# *West Richland's Experiment*

- Purpose of experiment was to determine if different varieties of mold could be grown
- Each contaminated slice of bread was placed in a sandwich bag away from sunlight
- Daily inspections were conducted by students in order to detect any mold growth

# *West Richland's Experiment*

- Soon different colors became visible
- Potato dextrose agar in slant tubes was used to grow selected varieties of mold
- Potato dextrose agar was chosen due to a longer shelf life
- A sterile metal pick was the device used to isolate colors on the agar

# *West Richland's Experiment*

- Students touched the pick on the mold before it was swiped across the agar
- Students isolated gray, black, white, and yellow mold
- Students checked experiment daily
- Identified mold varieties  included rhizopus, penicillin, and aspergillis

# *West Richland's Experiment*

- Students planned to transfer mold from test tubes used in the classroom to NASA's
- NASA's tubes were smaller than West Richland's
- The agar would not slide out the neck of the test tubes
- Students had to break the neck off the test tubes

# *West Richland's Experiment*

- Contents were placed in NASA's vial
- West Richland's Mold Experiment was mailed in June 1998
- Barbara Justis hand delivered vials on December 22, 1998
- Fifth and sixth graders unpacked the experiment they had prepared for space travel

# *West Richland's Experiment*

- Significant growth in one vial
- Fifteen had some growth
- Six showed no growth at all
- Microscopic investigation revealed no changes or unusual fruitings

# *West Richland's Experiment*

- Students were simultaneously growing more tubes of mold in the classroom
- Classrooms mold cultures were compared to cultures flown in space
- Microscopic investigation revealed no changes or unusual findings

# *West Richland's Findings*

- New growth of mold started from space cultures were monitored and compared to mold cultures kept in the classroom
- Students observed longer strands and larger fruitings on space mold

# *Benefits of Experiment*

- Taught students to think about types of mold and their growth
- Students learned how to conduct a scientific experiment
- Students learned how to use a microscope and how important it is to be able to use scientific tools

# *Benefits of Experiment*

- Students learned that conducting one experiment can lead to more questions
  - What kind of results would one see from a second generation of mold flying in space?